

CLAIMS

1. A vegetable room for a refrigerator comprising:

5 a vegetable box disposed inside a refrigerator in which a cooling air supply unit is provided to circulate cooling air therein and a plurality of shelves are provided, and having a receptacle space for receiving food items therein opened upwardly;

10 a box cover for covering an opening side of the vegetable box to close the receptacle space of the vegetable box and having a plurality of cooling air ventilating holes formed at one side thereof to introduce cooling air into the vegetable box;

a cover support unit interposed between the box cover and the shelf to support the box cover at the shelf;

15 a plurality of opening and closing members for opening and closing the cooling air ventilating holes of the box cover; and

an operating unit for operating the opening and closing members simultaneously.

2. The vegetable room of claim 1, wherein the cover support unit is
20 formed eccentric toward the front side on the basis of the center of the box cover so that when the vegetable box is separated from the lower side of the shelf, the front side of the box cover is relatively lifted compared to the rear side thereof due to its self weight.

3. The vegetable room of claim 2, wherein the cover support unit comprises:

a hinge bracket extended downwardly from both left and right sides of the shelf and having a hinge hole formed therein; and

5 a hinge shaft extended at both left and right sides of the box cover and inserted into the hinge hole so as to be movable vertically.

4. The vegetable room of claim 3, wherein the hinge hole is formed long vertically.

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5. The vegetable room of claim 2, wherein the cover support unit comprises:

a hinge bracket extended upwardly from both left and right sides of the vegetable box and having a vertically long hinge hole formed therein; and

15 a hinge shaft extended to both left and right sides of the shelf and inserted into the hinge hole so as to be movable vertically.

6. The vegetable room of claim 1, wherein the cooling air ventilating hole is formed long perpendicular to the direction in which cooling air is introduced, in order to allow cooling air to be smoothly introduced into the receptacle space of the vegetable box.

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7. The vegetable room of claim 1, wherein the opening and closing

member comprises:

a first opening and closing member rotatably supported at an inner side of the first cooling air ventilating hole formed at one side of the vegetable box; and

5 at least one or more second opening and closing members rotatably supported at an inner side of at least one or more second cooling air ventilating holes formed separated with a certain space from the first cooling air ventilating hole.

10 8. The vegetable room of claim 7, wherein the first and second opening and closing members are formed platy with a certain thickness and include a cylindrical support shaft extended at both sides thereof, the support shaft being rotatably inserted into an insertion hole formed at both sides of the first and second cooling air ventilating holes in order to rotatably support the first
15 and second opening and closing member at the inner side of the cooling air ventilating holes.

9. The vegetable room of claim 8, wherein either an outer circumferential surface of the support shaft or an inner circumferential surface of
20 the insertion hole are formed to be polyhedral so that rotation angle of the first and second opening and closing members can be controlled by steps.

10. The vegetable room of claim 8, wherein the support shaft is

formed eccentric toward a front side or toward a rear side on the basis of the center of the first and second opening and closing members so that the first and second opening and closing members can close the cooling air ventilating hole by its rotation according to self weight.

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11. The vegetable room of claim 7, wherein the operating unit comprises:

a driving unit interposed between the box cover and the shelf and opening the first cooling air ventilating hole by rotating the first opening and closing member; and

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an coupling unit for simultaneously rotating the first and second opening and closing members to open the second cooling air ventilating hole by interacting with the driving unit.

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12. The vegetable room of claim 11, wherein the driving unit is installed at the front side.

13. The vegetable room of claim 11, wherein the driving unit is installed at a rear side of the refrigerator.

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14. The vegetable room of claim 11, wherein the driving unit comprises:

a first protrusion formed protruded upwardly from the first opening and

closing member;

a knob installed to be movable linearly at one side of the shelf; and

a second protrusion protruded downwardly from the knob and rotating the first opening and closing member by interaction with the first protrusion

5 when the knob is moved.

15. The vegetable room of claim 14, wherein a guide groove is formed at the shelf to guide a linear movement of the knob.

10 16. The vegetable of claim 15, wherein a guide slot is formed at the inner side of the guide groove to allow the second protrusion to pass through the shelf and guide a linear movement of the second protrusion.

15 17. The vegetable room of claim 14, wherein the first protrusion is formed inclined at a certain angle in order to rotate the opening and closing member by being pushed by the second protrusion.

18. The vegetable room of claim 17, wherein the first protrusion and the second protrusion respectively have a curved shape with a certain curvature at portions where they are mutually contacted with each other so that they can
20 be smoothly slid.

19. The vegetable room of claim 11, wherein the coupling unit

comprises:

a connection pin extended downwardly from the first and second opening and closing members; and

5 a connection rod hinge-connected at the lower side of the connection pin and transmitting a rotational force of the first opening and closing member to the second opening and closing member when the first opening and closing member is rotated by the driving unit.

20. The vegetable room of claim 1, wherein a plurality of ribs are
10 formed at the bottom of the box cover with a certain height and with a certain width to collect moisture inside the vegetable box.

21. The vegetable room of claim 20, wherein the ribs have a grid
15 form.

22. The vegetable room of claim 1, wherein a cooling air discharge
hole of a cooling air discharge duct for discharging cooling air into a
refrigerating chamber is positioned between the box cover and the shelf at the
rear side of the refrigerator so that cooling air can be directly supplied between
20 the box cover and the shelf.

23. The vegetable room of claim 22, wherein a nozzle is provided at
a front side of the cooling air discharge hole, of which sectional area is

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diminished as it goes from a rear side to a front side in order to increase the discharge speed of cooling air.

24. The vegetable room of claim 23, wherein the nozzle is provided
5 to be positioned at a rear side of the rearmost cooling air ventilating hole.